PUBLIC HEALTH GIS NEWS AND INFORMATION

September 1998 (No. 24)

Dedicated to CDC/ATSDR scientific excellence and advancement in disease control and prevention using GIS

Selected Contents: Conferences (p.1); News from GIS Users (pp.1-7); GIS Outreach (p.8); Special Reports (pp. 8-11); GIS Lectures (pp.12-14); DHHS and NCVHS Update (pp.14-15); Website(s) of Interest (pp.15-16); Final Thoughts (pp. 16-17)

I. Public Health GIS (and related) Events

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SPECIAL CDC/ATSDR GIS LECTURE:
September 21, 1998, **"Remote Sensing for Research and Control of Malaria in Belize,"** Donald Roberts, Ph.D., Uniformed Services University of the Health Sciences, sponsored by the NCHS Cartography and GIS Guest Lecture Series, and CDC's Behavioral and Social Science Working Group, 2:00-3:15 P.M., NCHS Auditorium, Hyattsville, MD [see abstract this edition; CDC/ATSDR staff- please make offsite Envision arrangements now]

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☞ 1999 CDC/ATSDR Symposium on Statistical Methods, "Emerging Statistical Issues in Public Health for the 21st Century", January 27-29, 1999, Atlanta, GA [Contact: Brad Myers at bam6@cdc.gov or visit http://www.cdc.gov/od/ads/sag]

☛ Multiple Modalities and Multiple Frames of Reference for Spatial Knowledge, Project Varenius of the National Center for Geographic Information and Analysis (NCGIA), February 18-20, 1999, Santa Barbara, CA [Contact: Scott M. Freundschuh at sfreunds@d.umn.edu; see abstract this edition]

☞ The Fourteenth International Symposium on Computer-Assisted Cartography (Auto-Carto 14), "Representation, Analysis and Visualization of Geographic Information," March 16 - 18, 1999, Portland, OR [Contact: Marc Armstrong at marc-armstrong@uiowa.edu]

☛ The 95th Annual Meeting of the Association of American Geographers, "The Geography of Health Inequalities," March 23-27, 1999, Honolulu, HA [Contact: Mark Ridgley at ridgley@hawaii.edu or see www.aag.org]

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SPECIAL CDC/ATSDR GIS LECTURE
October 21, "Emerging and New Uses of GIS in Criminal Justice Research and Practice," Nancy La Vigne, Ph.D., National Institute of Justice, sponsored by the NCHS Cartography and GIS Guest Lecture Series, and CDC's Behavioral and Social Science Working Group, 2:00-3:15 P.M., NCHS Auditorium, Hyattsville, MD [see abstract this edition; CDC/ATSDR staff- please make offsite Envision arrangements now]

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SPECIAL CDC/ATSDR GIS LECTURE
November 5, "Do-It-Yourself Contextual Variables," Alan Saalfeld, Ph.D., Assistant Professor, Department of Civil and Environmental Engineering and Geodetic Science, The Ohio State University. sponsored by the NCHS Cartography and GIS Guest Lecture Series, and CDC's Behavioral and Social Science Working Group, 2:00-3:15 P.M., NCHS Auditorium, Hyattsville, MD [see abstract this edition; CDC/ATSDR staff- please make offsite Envision arrangements now]

II. News from GIS USERS

(Please communicate directly with colleagues on any issues)

A. General News (and Training Opportunities)

1. From **Brad Myers**, EPO, CDC and **Wayne Johnson**, NCHS, CDC: MathSoft invites you to participate in the 1998 International S-PLUS User Conference at the Sheraton City Center in Washington, DC, October 8-9, 1998. The conference is a forum for S-PLUS users from all industries to exchange ideas on data analysis, visualization and modeling with

S-PLUS. [For more information, email userconf98 statsci.com or see www.mathsoft.com/plus/lsprod/ serconf.htm or try voice (206) 283- 802]

2. From **David Williamson**, EPO, CDC (software for integrating qualitative and quantitative analyses): AnSWR is a software system for coordinating and conducting large-scale, team-based analysis projects that integrate qualitative and quantitative techniques. For a detailed description or to download a free copy of AnSWR v. 1.01, visit the CDC Division of HIV/AIDS Prevention website which can be accessed at http://www.cdc.gov/nchstp/hiv_aids/software/ swr.htm. AnSWR has been designed to meet the following needs: *Coordination of team-based qualitative data analysis, *Management of large, complex qualitative data bases, *Fully integrated quantitative data components, *Structured codebook development, *Hierarchical coding structures, *Text coding, *Intercoder agreement assessments, including kappa, *Flexible reporting options with multiple boolean selection criteria (files, codes, coders, quantitative variables), and *Output formats that facilitate import into both quantitative and qualitative programs. Take a look and tell us what you think. You are invited to send comments or questions to answr@cdc.gov or to Kate MacQueen, PhD, Research Anthropologist, Division of HIV/AIDS Prevention, NCHSTP, CDC at email kmm3@cdc.gov and Bobby Milstein, MPH, Behavioral Scientist, Office of Program Planning and Evaluation, OD, CDC at email bym2@cdc.gov.

3. From **Scott Freundschuh**, University of Minnesota-Duluth: Project Varenius of the National Center for Geographic Information and Analysis (NCGIA) is seeking interested researchers to participate in a 3-day specialists meeting on Multiple Modalities and Multiple Frames of Reference for Spatial Knowledge. The meeting will be held February 18-20, 1999, in Santa Barbara California. The workshop is being organized by Scott M. Freundschuh of the Department of Geography, University of Minnesota-Duluth, and Holly A. Taylor, Department of Psychology, Tufts University.

This meeting is part of NCGIA's Project Varenius Research Area on "Cognitive Models of Geographic Space." The purpose of the workshop is to identify and prioritize a research agenda for the topic. The structure of the meeting will be a combination of plenary sessions to identify and debate major issues and directions, and small-group discussions about more specific topics. Information and updates about this meeting are available at http:// www.ncgia.ucsb.edu/ varenius/initiatives/ncgia.html.

And, there is a related Varenius Workshop entitled "Cognitive Models of Dynamic Phenomena and Their Representations," October 29 - 31, 1998, in Pittsburgh. The ability to manipulate, store, and interpret information about changing environments is a critical skill for human survival, and also is very important for geographic information science. Models of the cognitive aspects of dynamic spatial representations are necessary for understanding temporal and spatial changes in environments, for the manipulation of temporal geographic data, and for navigation through changing environments. Furthermore, the use of representational codes may be dependent on the context of the problem, with different entity types resulting in the adoption of different spatial metaphors for reasoning and understanding. For example, an advancing forest fire may be thought of as a moving entity of changing shape and size, even though there is no real motion or growth, but rather a change in attributes at fixed locations. Other examples of dynamic geographic processes include navigation through changed environments, diffusion of diseases, and much slower processes such as glaciations, or continental drift and plate tectonics.

At a database level, we are concerned with issues such as forming discrete representations of continuous phenomena or continuous representations of discrete phenomena. Cartographically, the emphasis is on animation, but many methods have been used to show temporal phenomena in static maps. The use of dynamic and manipulable interfaces also must be investigated within the same conceptual framework used for observing dynamic phenomena in the real world.

This initiative takes a dual and parallel look at dynamic phenomena in geographic space itself, and at their representations in dynamic displays of geographic information. If research finds that there are systematic differences in human cognitive responses to various kinds of change and motion in geographic space, then different representations may be appropriate for the different situations. If different kinds of computer displays also trigger different kinds of human memory, reasoning, or decision-making, then the match between cognitive models for the phenomenon being represented and those for the display methods will influence how intuitive and usable the display will be. For further information see http://www.ncgia.ucsb.edu/varenius/ or please contact Stephen Hirtle at sch@lis.pitt.edu.

4. From: **Barbara Poore**, USGS (through David Mark, University of Buffalo): Administration support for NSDI- Clinton Administration Initiatives to Foster the NSDI. On September 2 at the Brookings Institution in Washington, D.C. Vice President Gore called for stronger efforts nationwide to enhance the livability and economic competitiveness of American communities. The Vice President said the Administration will expand its support for the use of geographic information systems technologies and encourage increased public access and sharing of geographic data to put "more control, more information, more decision-making power into the hands of families, communities, and regions to give them all the freedom and flexibility they need to reclaim their own unique place in the world." More text from the Vice President's speech may be viewed at http://www.fgdc.gov/publications/documents/rs/pr-090398.html.

In a related move, there are four designated Community Demonstration Projects, to run from July 1999 through May 2000, with each project community designated as a National Performance Review Reinvention Lab. At the federal level, a single NSDI Demonstration Project Lead will be identified to assure overall project integrity, resolution of cross-site issues, coordination, documentation of progress and results, and to facilitate cross-team communication. At the community level, a Community Planning and Implementation Team, including local and federal staff, will be responsible for planning and implementation. In addition, sponsoring agencies will identify a high level official to act as a "project champion" to assure that all possible federal resources are identified and that federal support issues are worked in a timely manner. At the local level, a Community Champion and/or project lead may also be identified to provide visibility and support. The following communities were selected for this demonstration effort: Baltimore Police Department, MD, Dane County, WI, Gallatin County, MT, Tillamook County, OR, Tijuana River Watershed and Upper Susquehanna-Lackawanna River Watershed. [Points of Contact: John Moeller, Executive for the Federal Geographic Data Committee, (703) 648-5752; or Mark Reichardt, National Partnership for Reinventing Government, (202) 694-0081; for more information see http://www.fgdc.gov/nsdi/docs/cdp.html.

5. From **Iris Shimizu**, NCHS, CDC (Through WSS-electronic-mail-list) Statistical Research Division Seminar Series, Designing The User Interface: The Case For Information Visualization, Bureau of the Census, Suitland, Maryland. The series will inform attendees of the integral part of usability in information technology system development and transition. Ben Shneiderman, Human-Computer Interaction, Laboratory, University of Maryland, presented Part I of the series on September 9, 1998, at the U.S. Bureau of the Census, The second seminar will be presented by Kent Norman on September 17 and the third seminar will be presented by Catherine Plaisant on September 24. [Contact: Barbara Palumbo at (301) 457-4892]

In a related development, Roy Ing, NCEH, CDC Internet Data Analysis and Presentation Workgroup, notes several Web references from Ben Shneiderman, that may be useful to those with an interest in Web visualization: http://www.cs.umd.edu/rojects/cil/ijhcs-copy/main.html; http://www.cs.md.du/rojects/hcil/Research/1995/dq-for-eosdis.html; http:/ww.cs.umd.edu/projects/hcil/Research/1997/

atientrecord.html; http://www.cs.umd.edu/ projects/ hcil/Photos/spotfilm.jpg.

6. From **Tom Richards**, PHPPO, CDC: In case GIS Users have not heard of the Atlanta Metropolitan Forum for Open Spatial Information Systems, the following is part of their mission statement. The Atlanta Metropolitan Forum for Open Spatial Information Systems was initiated in 1994 by the Fulton County Department of Planning & Economic Development as the OPEN GIS FORUM to identify overlapping GIS projects in the Atlanta metropolitan area, and to facilitate the search for an open, standardized, regional spatial-temporal information architecture. The FORUM seeks to help agencies in the fast growing, but politically fragmented, metropolitan Atlanta area to avoid costly redundancies and the project overlaps in collecting digital geographic data and building advanced, interoperable geospatial computing capabilities.

The FORUM does not offer a formal membership. It offers free participation in its sessions to the members of all organizations involved in promoting use of spatial information technologies, as well as the technology users, enthusiasts, and students who are not members of such organizations. Education is perhaps the most critical element in this early phase. It will not be possible to achieve institutional consensus and cooperation without learning from each other and promoting fundamental knowledge of the technology and its challenges and opportunities.

As part of its educational program, the FORUM provides participants with opportunities to learn how the work of the Open GIS Consortium (OGC) and the Federal Geographic Data Committee (FGDC)will support their efforts to establish interoperable geoprocessing in the Atlanta metropolitan area. For more information see http:// www.ogeta.com/forum.

7. From **Robert Laurini** (through The Ohio State University Center for Mapping): The 6th ACM SYMPOSIUM ON GEOGRAPHIC INFORMATION SYSTEMS will be held November 6-7, 1998, in Washington, D.C. This 6th symposium aims at bringing together all people carrying out research in novel systems based on spatial data and knowledge, within the framework of the 7th International Conference on Information and Knowledge Management (CIKM). The emphasis will be essentially targeted to the development of generic principles and systems in computing based on those applications. Cross-fertilizations and synergies between several applications can help to develop new computing knowledge. [Please visit http://www.cs. umbc.edu/cikm for conference information or contact Robert at email laurini@ifhpserv.insa-lyon.fr]

8. From **John Wilson**, University of Southern California (Transactions in GIS): Some of you have written and asked and many others may have wondered about the status of Transactions in GIS following the breakup and sale of GeoInformation International earlier this year. We as editors are pleased to be able to write and announce that Transactions in GIS has been acquired by Blackwell Science Publishers. Transactions in GIS will continue to publish guest editorials, research articles, review papers, technical notes, and book reviews on the evolving science, technology, and applications of GIS. Volume 3 will be published as four issues in 1999. We will immediately accelerate our efforts to process the manuscripts on hand now that the fate of the journal has been clarified. Individual authors and reviewers will be contacted separately as we continue our work to identify and publish innovative and informative contributions from our new home at Blackwells. Sincerely, John Wilson, Pip Forer, and Stewart Fotheringham. [Contact John at email jpwilson@ almaak.usc.edu]

B. Technical News

9. From **Tom Richards**, PHPPO, CDC (Small Business Innovation Research): "Geographic Information Systems and Community Health Planning" is one of the topics listed (under Centers for Disease Control and Prevention, Public Health Practice Program Office) in the FY 1999 PHS SBIR Contract Solicitation for 11/5/98 Proposal Receipt Date, posted August 25,1998 at the following

accessible website: http://www.nih.gov/grants/guide/notice-files/not98-117.html. The amount and period of support for SBIR awards are as follows:

PHASE I: Generally, awards do not exceed $100,000 for direct costs, indirect costs, and negotiated fixed fee for a period generally not to exceed six months.

PHASE II: Generally, awards do not exceed $750,000 for direct costs, indirect costs, and negotiated fixed fee for a period generally not to exceed two years, that is, generally, a two-year Phase II project does not cost more than $750,000 for that project. Only one Phase II award may be made for any SBIR project.

INQUIRIES: Eligibility requirements, definitions, submission procedures, review considerations, contract proposal forms and instructions, and other pertinent information are contained in the SOLICITATION OF THE PUBLIC HEALTH SERVICE FOR SMALL BUSINESS INNOVATION RESEARCH CONTRACT PROPOSALS (PHS 99-1) for the proposal receipt date of November 5, 1998. This PHS SBIR Contract Solicitation will be available electronically in the near future through the NIH Small Business Funding Opportunities home page at http://www.nih.gov/grants/funding/sbir.htm on the World Wide Web.

A limited number of hard copies of the PHS SBIR Contract Solicitation is produced. Subject to availability, they may be obtained from: PHS SBIR/STTR Solicitation Office, 13687 Baltimore Avenue, Laurel, MD 20707-5096 or voice (301) 206-9385 or email a2y@cu.nih.gov.

10. From **Linda Piccinino**, NCHS, CDC (A Research Conference on the 1995 National Survey of Family Growth): The National Center for Health Statistics (NCHS) and the Office of Behavioral and Social Science Research (OBSSR) of NIH announce the first research conference on the National Survey of Family Growth (NSFG), to be held at NCHS in Hyattsville, Maryland, on October 13 and 14, 1998. The 1995 NSFG (Cycle 5) is a national survey of 10,847 women 15-44 years of age, interviewed between January and October of 1995. The data set includes detailed event histories of living arrangements during childhood; education; work; marriage and divorce; cohabitation; sexual partners; contraception; and pregnancy. There is in-depth information on the intention of pregnancies; religious background; attitudes toward family and gender roles; use of family planning services and other medical care; and many other topics. While increasing the analytic potential of the survey, the time series of key fertility-related indicators have been maintained. In short, the 1995 NSFG is a very rich data set, useful for more in-depth research than was possible with its predecessors conducted in 1973, 1976, 1982, and 1988.

The purpose of this conference is to present some original research using the new NSFG data from Cycle 5, and to allow the researchers to meet and discuss the data set and the issues it raises. The 2-day conference includes over 20 papers on a wide range of NSFG topics. More information about the NSFG can be obtained from the NSFG homepage at: http://www.cdc.gov/nchswww/about/major/nsfg/nsfg.htm. [Contacts: Anjani Chandra at voice (301) 436-8731, ext. 128 or email ayc3@cdc.gov or Linda Peterson at voice (301) 436-8731, ext. 126 or email lsp2@cdc.gov]

11. From **John Blodgett**, University of Missouri St. Louis (through Arlene Siller, NCHS): ZIP codes and counties. We have spent so much time over the years answering questions about ZIP codes and how they relate to other geography that we finally created a new web page (http://www.oseda.missouri.edu/uic/ZIP.resources.html) to hold everything we know about on the subject, with pointers to other sites where they may know even more. This may be way more than anyone will want to wade through, but if you are specifically interested in just the ZIP-county question then you might want to follow the link on the above page to http://www.oseda.missouri.edu/mscdc/sasfmats/zipfmats.usgnotes. This page is based almost entirely on a response I posed to SAS-L a year or 2 ago when there was a thread about whether there should be a built-in SAS function for converting ZIP codes to counties (just as there is now for state). The second half of this page is an article called "ZIP Codes and

Counties". The good news is that if you know what ZIP code somebody lives in and you have the latest ZIP to county detailed correspondence file then you can assign a county based on ZIP and be right 98.2% of the time. The bad news is that it is difficult to keep up with the latest ZIP to county correspondence and, even if you do, there will be *SOME* ZIPs where you could be wrong more than 10% of the time. [Contact: John at voice (314) 516-6014 or e-mail: john_blodgett@ umsl.edu]

C. Internet News

12. From **Mike Meuser**, Clay-Meuser & Associates: I was just looking at EPA's enviromapper (their section on interactive mapping) and noticed a glaring omission so I thought I'd point you to our website for more info on interactive mapping. Note that they do mention the EDF chemical scorecard (we did the interactive mapping for this project), but do not mention our Santa Cruz TRI, a project that we began over two years ago under the banner of our non-profit SEEK (Sustainable Economic and Environmental Knowledge). Note that our Santa Cruz TRI was the first interactive www toxic mapping project in the US. So, go to our project page and check out some of our projects and also go to our home page for resources for interactive www mapping and our "US toxic maps" if you're interested in mapping toxics on the Internet. [References: http://www.mapcruzin.com/projects/ and EPA's enviromapper http://www.epa.gov/ceisweb1/ ceishome/atlas/enviromapper/]

13. From **Rob Lake**, Environmental Modeling Inc. (AIDS Data Animation Project): AIDS Epidemic animations which relate both to GIS, health, and geospatial issues can be found at http://www. ciesin.org/datasets/cdc-nci/cdc-nci.html. Overview: The still frames and animations illustrated at this web site document disease trends for the years 1981 to 1993 using mortality data from the National Centers for Health Statistics. In their simplest version (US-non aggregate), stills were created for each week in the 13-year period. Stills show the age-, sex-, and race-adjusted AIDS mortality for each county for the one year period around the week of interest (six months forward and back). All non-zero rates from all stills were ordered and the events were divided into 64ths of rank; these were assigned the color spectrum shown on the bottom bar.

Because confidentiality agreements required not reporting rates derived from counts less than three, and because there were many such observations, the US-non aggregate animation may underestimate the progression of AIDS mortality in rural areas. To compensate for this potential bias, two forms of aggregation were used. In the animation labeled US small county aggregate, All counties within a state with counts of 0, 1, or 2 AIDS deaths were lumped and their combined rate was calculated and colored. In the animation labeled "US State Economic Areas" counties were combined as defined by this standardized classification.

This series of maps and the animation derived from them provide a new perspective on how AIDS mortality has advanced over the previous decade. AIDS mortality can be seen to be increasing in urban epicenters and recent advances in rural Southern counties are also remarkable. While these maps are extremely data-dense representations, they apply the simplest epidemiologic methods to well-characterized mortality data. More importantly, they make real data vividly accessible to non-epidemiologists. [Contact: Rob can reached at rbl@po.cwru.edu]

14. From **T.J. Moore**, University of Washington [through ppgis-scope@igc.org]: New Epa Internet Website Makes Environmental Information For Each Neighborhood More Easily Accessible. U.S. Environmental Protection Agency Administrator Carol M. Browner today unveiled an Internet Website that will allow citizens to easily obtain up-to-date, comprehensive, accurate environmental information about their communities simply by entering a zip code. The Website is part of the Clinton Administration's right-to-know programs that are designed to provide Americans with needed information about local pollution. The new Internet website is accessible at: http://www.epa.gov/ceis.

The source of the new Website, the Center for Environmental Information and Statistics (CEIS), was

set up in March 1998 by Browner to improve public access to reliable and comprehensive information needed by citizens to protect their health and environment. It is a national, source of reliable and comprehensive data and information on the state of and trends in environmental quality. Unlike other websites, the CEIS Website is formatted in an interpretive manner for individual counties rather than a line-by-line listing of data.

"The Center for Environmental Information and Statistics is a giant step forward in providing the American people with accurate, timely, and easy-to-understand, easy-to-access environmental and public health information," Browner said. "Anyone can quickly obtain a snapshot of air and water quality, hazardous waste and toxic chemicals in their own community, all on a single Webpage which can become a focal point for community partnerships, an education tool for young people and an invaluable reference tool in libraries."

For anyone not having a personal computer and a modem, the Website is accessible on computers in most public libraries, through the cooperation of the American Library Association, in 24 federal EPA offices nationwide and in the 1,363 Federal Government Depository Libraries across the country; each state has six or more Depository Libraries in state universities or elsewhere. Volumes of EPA air, water, toxics and waste information which are available but often are inaccessible to the average citizen, will now be available to anyone using a computer and a modem. The user can pinpoint the search to his or her own community and even create a map of their own community using the "community mapper" feature. Specific subject area EPA websites are linked to the CEIS website. Most important, the CEIS Website provides contextual information which explains the meaning of the secured data.

For the first time, everyone with Internet access can find in one place a variety of useful information, including: environmental profiles for each state, county and territory, a starting point for understanding EPA's data on environmental quality and changes in conditions over time, at the state or community level; the profiles include information on air and water quality, drinking water, and hazardous wastes and toxic releases county by county; a digital library which lets users search more than 100 EPA reports on environmental quality and a number of other environmental reports at the community, state, regional and national levels; and, an atlas of maps covering a wide range of environmental topics.

The CEIS Website can also zero in on a specific place or topic, link data and information at state and county levels, explain the data and what it means, dig into EPA data sets and programs to serve technical information users, and, describe how the data were collected, their applicability and limitations. EPA's Internet homepage, to which the new one-stop source is linked, is being visited close to 35-million times a month, proving the interest of Americans in obtaining environmental information through their computers. [Contact: TJ at tjmoore@u. washington. edu]

15. From **Lois Dean**, HUD (through ppgis-scope@ igc.org): Electronic Version of North American Ecological Regions. The CEC's publication, Ecological Regions of North America: Toward a Common Perspective, is part of a major regional effort to redraw the North American map in terms of ecosystems and ecological regions instead of political boundaries. This publication, which contains full-color maps of North American ecological regions as well as photos, descriptions and case studies, has become an "environmental toolbox" for environmental groups, government agencies and others to help describe, understand and manage the region's common environment and its natural resources. Now the electronic versions of all materials prepared for Ecological Regions of North America are available on the CEC's Internet site at: http://www.cec.org/english/ resources/publications/ found under the "Environmental Conservation" section. Also, EPA has released the most recent Community Right-to- Know data on toxic releases. Check out the Toxic Release Inventory website at http://www.epa.gov/opptintr/tri for the new 1996 data!

III. GIS Outreach

(Editor: All solutions are welcome and will appear in the next edition; please note that the use of trade names and commercial sources that may appear in *Public Health GIS News and Information* is for identification only and does not imply endorsement by CDC or ATSDR)

☎ From Melissa M. Adams, National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP, CDC): I'm an epidemiologist who is working with a data set of maternally-linked birth certificates (births to the same woman that have been linked chronologically from 1980-1995 in Georgia). For each birth, we have geocoded the mother's residence. I'm very interested in connecting with others who are using GIS, especially with regard to pregnancy outcomes. Thanks very much. [Contact: Melissa is in the Division of Reproductive Health and can be reached at voice (770) 488-5143 or email mma1@cdc.gov]

☎ From Ric Skinner, The EADS Group: Are you aware of any studies where GIS has been used to map locations and types of melanomas? A doctor at a large dermatology practice here in the Lehigh Valley is interested in mapping melanomas -- they have 300,000 patient records to work with. He has a particular interest in melanomas and potato ingestion related to arsenic in potato pesticides. I know of the work by Coates and Uren using ArcView to map melanomas on the human body. I'm looking for studies that map to locations in the community. [Contact: Ric at voice (610) 965-7060 or email wskinner@fast.net]

☎ From Doug Plata, Loma Linda University: I would appreciate any help in locating files which contain Ethiopian boundaries, roads, cities/towns/villages locations and village population numbers and any health data that could be overlayed. Does anyone know how I can get these? [Contact: Doug at email vegedoc@ hotmail.com]

☎ From Mike Basil, University of Denver: I'm wondering if there is data on community-level structural factors that may affect exercise (such as miles of bike trails, number of parks, etc.). I'd like to compile the data by city or ZIP code to see if it predicts exercise behavior (I was thinking in terms of our Healthstyles data, but it may be possible to do something similar with the BRFSS). [Contact: Mike at (303)-871-3984 or email mbasil@du.edu]

☎ From Sarah Greening, Cardiff, UK: I'm all fired up with enthusiasm after a GIS workshop yesterday in Birmingham (thanks to Ralph & Duncan at WMCIU) with others from the cancer registries in UK. One topic that we discussed was establishing travel distances from a certain point. This has given me an idea for a research project which may be of interest to others or that others may be able to give me further advice on: I would like to find out travel distances for a subset of the population (women of 50-64 years) to our breast screening units - I have mapped the information on where the units are placed (they are mobile and so could be moved if the mapping results showed a better catchment area elsewhere) in Wales and I have a database of the required population with postcodes, gridrefs etc. What I hope to show is that those that don't attend screening are predominantly those that have to travel further (it has been given as a reason for non-attendance in the past). I am told (by a salesperson, of course!) that I need add-on software (I use MapInfo Professional) called Routefinder that costs about 700. Could anyone suggest a cheaper way of doing this? To get this software I will have to apply for a research grant etc. but otherwise I could just do it as part of my work. Or if anyone could give me some other uses for this software I may be able to justify buying it from existing funds! [Contact Sarah at email sarah. greening@velindre-tr.wales.nhs.uk or visit http://www.cf.ac.uk/ccin/main/health/btw/btwhme.html

☎ From Mike Oats, New England Research Institutes: This note is to ask for some more help. You may recall that I am a beginner GIS user, so forgive me if I'm off on technical aspects. I want to study/map 1990 Census block group polygons in Arc/View. I know that I cannot read TIGER files directly into ARC/VIEW, but I understand that the data can be "transferred" through ARC/INFO. I assume the appropriate TIGER data are available somewhere. Can you tell me if it is possible

to analyze these blockgroup-level data (polygons) in ARC/VIEW, and if so the steps I would need to take to do so? [Contact Mike at voice (617) 923-7747 or email jmoakes@neri.org]

IV. Special Reports

(Submissions are open to all)

Minority Training Report: The 15th Annual HBCU GIS Summer Faculty Workshop

The Urban Environment Institute at Howard University recently hosted the 15th Annual HBCU GIS Summer Faculty Workshop. The series of workshops were designed to assist the faculty of Historically Black Colleges and Universities (HBCUs) throughout the United States to integrate innovative satellite-based technologies into their programs. The week-long program, held July 26-August 1, 1998 at Howard University's School of Continuing Education, was attended by 24 faculty members from HBCUs, 12 representatives from Federal Agencies and five representatives from the private sector.

Since the first communications satellite-the Soviet Sputnik-was deployed over three decades ago, remarkable advancements have been made in satellite technology. Today, all types of satellite-based applications are being developed to identify problems from thousands of miles above the earth. Major issues and events such as overpopulation, natural disasters, pollution and deforestation can all be tracked by satellite. The Geographic Information System (GIS) coupled with the Global Positioning System are today probably the most powerful instruments for identifying problem areas on the earth.

GIS is a computer-based tool for mapping and analyzing occurrences on the earth. These are achieved utilizing statistical analyses and database operations that enable the forecasting of events and the planning of necessary emergency measures. The unique mapping capability of the GIS arms its user with a potent geographic tool for a variety of functions; be it identifying contaminated soil, abandoned sites, visualizing scenarios or even creating maps. The GPS makes the GIS effective because it provides the information necessary for the GIS to conduct analyses and database storage. The GPS is comprised of 24 U.S. Government-owned satellites orbiting 12,000 miles above the earth, 24-hours a day and constantly providing accurate, worldwide positioning and navigation information on the earth.

A specific goal of this year's workshop was to assist faculty members to incorporate GIS technology into the classroom to enhance problem-solving skills. Familiarization with the GIS technology, it is hoped, will enhance research opportunities at HBCUs and minority institutions. It would also arm HBCUs with the capacity to perform spatial analysis studies in their respective communities, disseminate important data affecting their communities, and offer training programs to their local citizenry.

A reception was held at the Holiday Inn in Silver Spring, MD where program director Cynthia Warrick welcomed the participants and stressed the value of the workshop both as a networking and learning opportunity. A panel discussion was also held to highlight the importance, relevance, and significance of this type of technology in academic settings. The discussion centered on the design of effective GIS curricula. "I am happy to say that these workshops [over the years] have provided HBCU faculty the opportunity to develop research and programs in GIS," said event program manager, Cynthia Warrick. Three of the HBCUs have since initiated partnerships with their local city governments to help identify contaminated and abandoned sites utilizing their GIS/GPS capability, according to Warrick.

This year's program offered both an introductory and an advanced training track. The introductory course included MapInfo GIS training over a two-day period, agency presentations from BLM and FEMA, and a faculty presentation in "Crime Mapping". **Lee DeCola**, the USGS Workshop coordinator, presented a lecture on "GIS on the Internet". Additionally, an information session was given by **Barbara Poore** on the Federal Geographic Data Committee's (FGDC) National Spatial Data Infrastructure (NSDI). All of the 24 faculty participants received complimentary MapInfo software to take back to their institutions.

The advanced track consisted of a workshop

that incorporated the GPS into a GIS exercise. Utilizing the twin technologies, the participants conducted a mapping session of Fort Dupont Park in Anacostia, Washington, D.C. with the cooperation of the United States Park Service. The participants were broken up into four-member teams utilizing a variety of GPS equipment provided by the Federal agency partners [the National Park Service (NPS), National Imaging and Mapping Agency (NIMA), United States Geological Survey (USGS)] and two private sector partners - Navtech Seminars & GPS Supply and the American Red Cross. The teams mapped unmarked trails and other areas that the Park Service requested throughout the three-acre park, using the GPS satellite tracking system.

All three workshop private partners-the Red Cross, Navtech Seminars & GPS Supply, and the MapInfo Corporation-provided equipment and instruction on GIS/GPS use. The Federal Agency partners included: the Agency for Toxic Substances & Disease Registry (ATSDR), the Bureau of Land Management (BLM), the CDC National Center for Health Statistics (CDC-NCHS), the Federal Emergency Management Agency (FEMA), the National Park Service (NPS), the Office of Surface Mining (OSM), the US Geological Survey (USGS), and the National Imaging and Mapping Agency (NIMA).

The HBCUs and minority universities that were represented included: Howard University, University of the District of Columbia, Alabama A&M State University, Albany State University, Clark Atlanta University, Fayetteville State University, Florida A&M University, South Carolina State University, Langston University, North Carolina Central University, Prairie View A&M University, Savannah State University, Texas Southern University, Tuskegee University, Xavier University, and Delmar University.

This year's workshop was sponsored through a cooperative agreement from the Federal Geographic Data Committee (FGDC), National Spatial Data Infrastructure Initiative (NSDI), and through agency contributions from ATSDR, BLM, OSM, and USGS. [Contact: Cynthia Warrick, Urban Environment Institute, at voice (301) 585-2295 or email cwarrick@con-ed.howard.edu; Editor: Cynthia also notes- Did you know that to fulfill President Clinton's Executive Order on doing business with HBCUs that you can "purchase" training services (ie., GIS workshop)? That is the mechanism that USGS and OSM have used to fund the workshop. A grant or cooperative agreement is not required, just a purchase order that describes the service you are purchasing, GIS training for HBCU Faculty, and the product of that service is the final report. Please check to see if you have any year end funds that you need to expend. We will be very appreciative of any amounts you can locate for the Annual HBCU GIS Summer Faculty Workshop. If you have any questions about this, contact Lee DeCola at ldecola@usgs.gov]

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Health Sleuths Use Maps to
Pinpoint Sources of Disease

(Special Report on the "GIS in Public Health Conference," The San Diego Union-Tribune, August 21, 1998) For a Sherlock Holmes in public health, the challenge is to find the source of an illness, especially when evidence appears irrelevant or scattered. Now, these detectives of disease have a powerful tool, a kind of magnifying glass to find the most elusive clue. It is GIS, or geographic information systems, and hundreds of public health and mapping experts from around the world came to a conference here this week to learn how it might work for them. "This is as important as the invention of the microscope . . . for public health," said a keynote speaker, Thomas Casadevall, acting director of the U. S. Geological Survey in Reston, Va. The agency's satellite and topographic maps are being used in GIS. The technique involves the use of these and other maps superimposed to show an area's pesticide use, air and water currents, types of agriculture or industry, earthquake faults, types of housing and dozens of other data sets in hope of finding similarities that might be linked to a cause of disease.

"GIS is helping us handle massive amounts of data to address the risk of hazardous waste sites," said Dr. Virginia Lee of the federal Agency for Toxic Substances and Disease Registry in Atlanta. The

agency is looking to see if people living near uch sites are more likely to be diagnosed with certain types of brain cancer. Maps showing homes of 35,000 people who have been diagnosed with brain cancer in five states, including California, their age, sex, smoking history and occupation are superimposed with maps showing use of herbicides or pesticides and other bits of environmental information. "We hope this will allow us to generate hypotheses to see if there are any clusters," she said. Similarly, areas where babies are born prematurely, or with higher rates of birth defects, can be spotted through this sleuthing technique.

In an effort to study rates of childhood asthma and other diseases, compared with pesticide use, state health and federal EPA scientists placed maps showing private and public schools, day-care centers, migrant camps and parks on top of maps showing population density and use of the 10 most commonly used pesticides, as reported to the state, in Imperial and San Diego counties. They found that 55 percent of the schools in San Diego County and all of the schools in Imperial County had pesticide applications within 2.8 miles, although it remains unclear whether the children or employees in those schools were actually exposed. The study recommended additional environmental and biological monitoring to assess that exposure.

The three-day conference, which ends today, is sponsored by 11 government agencies or professional associations, including the U.S. Centers for Disease Control and Prevention, the U.S. Environmental Protection Agency, the U.S. Geological Survey, the American Public Health Association and the Society of Civil Engineers. It drew several hundred officials from as far as Australia. Many are from municipal health, disaster or hazardous waste agencies.

Several scientists pointed out that such sets of data have been around for decades, but only recently, through the use of faster, more sophisticated computers and the Internet, have they had the technical ability to combine them. "We already know the what. With GIS, we can get the where involved, the linkage that we're trying to establish of whether it is something in the environment," said Stephen Guptill, scientific adviser with the U.S. Geological Survey.

Paul English and colleagues with the state Health Department's Environmental Health Investigations Branch used GIS to examine whether living near busy roads was associated with asthma in children younger than 15. Using state Medi-Cal bills, the number of medical visits and traffic flow data, his study concluded that "residence near busy roads may be more related to an increase in severity or number of asthmatic symptoms . . . (and) repeated exposure to pollutants from traffic exhaust may aggravate asthmatic symptoms."

San Diego County health officials used map overlays to see whether hepatitis A is disproportionately affecting certain areas of the county. It is, their study found. "Rates were higher in ZIP code areas close to the U.S.-Mexico border and in areas with greater concentrations of Hispanics, Spanish-speaking households, and specific socioeconomic indicators," the study said. Dr. Michelle Ginsberg, the county's epidemiologist and one of the authors of the hepatitis A study, said San Diego County is in the "neophyte" stage of using GIS to be more effective in preventing illness.

Public interest groups also have discovered GIS technology. A study released Wednesday looked at how many California residents live near areas where pesticides are used heavily. The report, prepared by the California Public Interest Research Group, overlayed state pesticide-use data and census data. It found that 136,200 residents in San Diego County live within a half-mile of where potentially toxic contaminants are heavily used, including fumigants and agricultural pesticides. Such residents may be exposed to "drifting" airborne substances that could cause cancer or other health problems, the CalPIRG study says.

"I think the public is aware of pesticides as a problem in food and in water," said Mary Raftery, a spokeswoman for Physicians for Social Responsibility, who attended the news conference. "I think people do not know there is a problem with air contamination and that is information the public needs to know." CalPIRG suggested the state monitor and regulate

pesticides better and called for legislation to limit the use of some pesticides and encourage non- toxic pest control practices.

At the conference, geology experts said GIS might be extremely helpful in disasters, for example, plotting the impacts of spills or fires after an earthquake. In West Virginia, CDC scientists are tracking victims of LaCrosse encephalitis, a disease caused by a virus carried by certain types of mosquitoes that breed in tree holes and man-made containers. Scientists want to determine which types of trees the mosquitoes like best. Asked whether GIS has made his job easier, CDC entomologist Chester G. Moore said, "Goodness. It's made it more than easier. It's made it possible. " [Source: Copyright 1998, The San Diego Union-Tribune, Cheryl Clark, Staff Writer]

V. NCHS Cartography and GIS Guest Lecture Series

(This section may include literature citations, abstracts, syntheses, etc., and submissions are open to all)

"Remote Sensing for Research and Control of Malaria in Belize" [September 21, 1998 NCHS GIS Guest Lecture with Envision availability to offsite CDC/ATSDR locations], Donald R. Roberts (Principal Investigator), Uniformed Services University of the Health Sciences. Abstract- Remote sensing and GIS can be used to predict presence and abundance of malaria vectors. The technologies can also be used to map distributions of humans and relative risks of malaria. These capabilities will be discussed in the context of their cost-effective use within a national malaria control program.

Background: A three-year program of NASA-funded research entitled "Remote sensing for research and control of malaria in Belize" is now in the final stage of completion. This research was designed to address specific science issues leading to the application of remote sensing and geographic information system technologies to target and manage malaria control in Belize. This grant was a natural extension of NASA's project to develop predictive models, driven by satellite data, of malaria transmission potential. Malaria was selected for study because of its global importance and because a predictive capability could lead to improved, cost-effective control operations.

We proposed to use multispectral satellite data to predict disease (malaria) trouble spots based on clear understandings of environmental factors that determine the presence of disease vectors. This was proposed as a multidisciplinary program of research involving multiple organizations with Belize as the performance site. Belize was characterized as a small country with a "big" malaria problem.

The proposed research was aimed at improving the malaria control program in Belize. Activities included such diverse efforts as field and laboratory studies, use of remote sensing and geographic information system technologies, mathematical modeling, developing predictions and testing new technologies, as well as training and capacity building. The hypothesis was that "Remote sensing and geographic information system technologies, employed within a paradigm of systematic field and laboratory studies, could be developed as tools to cost-effectively target and prioritize the application of vector control measures within a national malaria control program." The planned end product was predictive capabilities, based on remote sensing data, for each of the important malaria vectors in Belize and eventual implementation of the technologies within the national malaria control program. We are now in the final stages of the third year of research. The results of this research has exceeded our objectives and expectations. We have determined that one of the four supposed vectors of malaria is not important in the overall scheme of malaria transmission in Belize. Consequently, Belizeans can now focus their efforts in the control of malaria transmitted by only three vector species.

Additionally, the malaria control program, i.e., house spray program, was restarted in 1995 and significant reductions in annual numbers of malaria cases have occurred since 1996. Predictive models have been developed for all three vector species. Additionally, we are presently developing predictive models of malaria risk that not only incorporate components of vector ecology, but also emphasize components of human ecology. By developing village maps, conducting census surveys and by

cross-referencing census data with the national, multi-year malaria case data base; Ministry of Health personnel can now place malaria cases into individual houses. Through this process, we have ascertained that malaria risk occurs at the household level and that houses in close proximity are not at equal risk. These observations simply verify what we had observed through our predictive models for the presence and abundance of malaria vectors at household sites.

The important point of recent findings is that only about 16% of rural households are responsible for most of the malaria cases, and this association is true year after year. Consequently, we expect that our predictive models can be used to identify a significantly smaller population of households for the application of malaria control measures. Through this process, we expect to gain a high level of control at reduced cost. We have been training and developing capabilities and infrastructure within the Malaria Control Program in Belize.

Malaria control personnel conduct most surveys, map villages and collect and maintain village and rural house census data. They are also responsible for the cross-referencing of census data with the national malaria case data base. Malaria Control Program personnel are now fully capable of continuing to develop GIS and remote sensing capabilities within the Ministry of Health. We are presently developing proposals for applied research to conduct large scale trials implementing this new conceptual model of malaria control. Additionally, we are preparing a proposal to continue a small program of basic research to answer specific questions that evolved from past research effort. [Contact Don at 4301 Jones Bridge Rd, Bethesda, MD, 20814 or voice 301-295-3731 or email at droberts@mxa.usuhs.mil; Project Participants: Hilbert Lenares,(1) Eliska Rejmankova,(2) Yvette Alonzo,(1) Jack Paris,(3) Sharon Franklin,(1) Kevin Pope,(4) Richard Andre,(5) Tamara Awerbuch,(6) and Larry Laughlin(5)= (1) Vector Control, Ministry of Health, Belize C.A.; (2) University of California, Davis, CA; (3) California State University at Monterrey Bay; (4) GeoEco Arc, La Canada, CA; (5) Uniformed Services University of the Health Sciences, Bethesda, MD; (6) Harvard School of Public Health

"Emerging and New Uses of GIS in Criminal Justice Research and Practice"

[October 21 NCHS GIS Guest Lecture with Envision availability to offsite CDC/ATSDR locations] Nancy La Vigne, Director, Crime Mapping Research Center, National Institute of Justice. Abstract: The use of GIS in criminal justice research and practice is relatively new. Local law enforcement agencies have begun to reap the benefits of this analytic tool for targeting resources and identifying crime patterns, and departments of corrections are at the very early stages of exploring the utility of mapping for caseload allocation and monitoring purposes. This presentation provides an overview of current and likely future applications of GIS in the field of criminal justice.

[Editor: My following comments appeared in the June edition of *Public Health GIS News and Information* about Dr. La Vigne's plenary talk at Towson University's annual GIS Meetings: "GIS development in criminal justice is emerging as an important tool for improving crime prevention which, from any perspective, is an integral part of public health. For example, in New York City, a COMPSTAT model successfully blends computers and statistics in a GIS environment to aid in the timely response to crime in real time and to the detection of crime clustering and patterns. This use of GIS has been credited as a key element in the reduction of New York City crime.

There is other emerging evidence to support the versatility and innovative use of GIS in the criminal justice system. One, some police departments are starting to use the Web for posting crime statistics and maps. Two, some prison cell assignments are being made with greater sensitivity to prisoner origins where prior association with areas of infectious diseases such as TB and AIDS parlay into the assignment equation. Even the management of prisoner flows e.g., through time and space, are being tested with GIS. Third, orthophotoquads of crime areas have been used by U.S. attorneys to help validate plausibility tests related to the timing and navigation of criminal acts. Fourth, new uses of GPS with electronic monitoring are being tested including community notification (Megan's Law) of sex

offenders. Fifth, GIS is being tested in the assignment of risk and route for improved community law enforcement through spatial statistical correlation. Lastly, predictive modeling with GIS through neural network analysis is being tested to show not just where hot spots occur but where, in the case of drug markets, they can be expected to become established."]

The National Institute of Justice (NIJ) Crime Mapping Research Center(CMRC) is newly established. The goal of the CMRC is to promote research, evaluation, development, and dissemination of GIS technology. The CMRC may be viewed at http://www.ojp.usdoj.gov/cmrc/.

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Do-It-Yourself Contextual Variables

[November 5, 1998 NCHS Guest Lecture with Envision availability to offsite CDC/ATSDR locations] Alan Saalfeld, Assistant Professor, Department of Civil and Environmental Engineering and Geodetic Science, The Ohio State University. Abstract: Microdata (data records from individuals) are released by government agencies to the public after the records have been stripped of geographic and other potentially compromising identifiers. Data users would like to know precise geographic location of the records to perform spatial analysis on the data. Users only really need to know relative geographic information about the records to be able to perform spatial analysis. Computing and appending contextual variables to individual records is one option for facilitating spatial analysis by the user. A contextual variable provides the user with summary local information such as averages of surrounding or neighboring individuals.

There are several obvious concerns about attaching contextual variables to a data record. The primary concern is to avoid compromising an individual's identity by inadvertently exposing too precise a location for the individual. Other key concerns are the cost of processing and the choice of context (not all users want summaries at the same level or type of aggregation).

In this talk, we offer an alternative solution to delivering contextual information as a pre-computed appended variable. We propose instead to organize and deliver the data records as an ordered list that permits the user to compute any number of contextual indicators for a wide variety of different sized neighborhoods or contexts. We show how intervals of consecutively sequenced records in our list can be made to correspond to samples from neighborhoods. This talk examines ways of ordering spatial data so that the ordering reflects different notions of proximity and different sampling strategies. We offer some ideas for randomizing resulting samples. Finally, we discuss our methods' advantages of better data protection, easier data generation, and greater opportunities for spatial analysis.

VI. Related Census, DHHS and Other Federal Developments

Meetings of the NATIONAL COMMITTEE ON VITAL AND HEALTH STATISTICS, Excerpts, March 3-4, 1998, Washington, D.C. DEPARTMENT UPDATE. Mr. Scanlon reported on a new race and ethnicity data initiative: The Secretary has instructed agency heads to implement the new OMB policy on race and ethnicity in their agency data planning and collection cycles, and to try and collect useful supplemental data relevant to disparities between population groups. He also described planning and performance measurement activities in response to the Balanced Budget Amendment, and other work on survey integration and Healthy People 2010. He invited Committee advice about provider surveys.

Race and ethnicity data policy. On November 1 the Secretary issued a policy requiring that virtually all HHS data systems and data collection include race and ethnicity data. Heretofore, some significant ones did not, and no clear policy existed. Agency heads have now been instructed to implement the new OMB policy in their agency data planning and collection cycles. In addition, the agencies are encouraged to expand data collection needed to improve research on disparities in health status and services needs. Subpopulation data collection is also encouraged, as well as other variables relevant to assessing and improving the health of minority populations. There will also be an effort to do more innovative analysis of existing data.

REPORT OF THE SUBCOMMITTEE ON PRIVACY AND CONFIDENTIALITY. Mr. Gellman reported on a two-day workshop held in January. The first day focused on the nature of the identifiable record, a pivotal concept in proposed legislation and a difficult one to define. He called attention to research by Latonia Sweeny of MIT, demonstrating the ability to link to personal records starting with a few non-unique identifiers. Such capabilities make it necessary for agencies and IRBs to constantly re-examine their information policies to guard against inadvertent disclosures. Also, legislation needs more than a simple word test to establish protections. The Subcommittee's goal was to find a solution to this problem, but this did not emerge from the hearings. They did serve the purpose of raising the visibility of the issue.

Mr. Blair remarked that concerns on the Hill about disclosure of genetic information have contributed to the fragmentation of legislation around confidentiality. Mr. Gellman agreed, noting the proliferation of narrow bills and confusion among Congress members about what to support. The second day of the January hearing focused on data registries, which range from ones with public health value to ones that exist for commercial purposes. There is no comprehensive regulatory structure for registries, and proposed legislation has not addressed the issue of distinguishing between the good ones and the others. What is needed is either a statutory definition or a process for identifying the good registries.

Other projects. The Data Council's continuing projects include health data standards, the unique health identifier for individuals, classification systems and code sets (including work on ICD-10), and health information privacy. In addition, the Council will work on a conceptual framework for the national health information infrastructure.

The Data Council will review the status of survey integration over the next few months. The next steps are provider and employer surveys, seeking a more integrated look at care. The Department also has a work group on the monitoring and surveillance tools needed in the event of anti-tobacco legislation. The possibility of more user-friendly grant policies for states regarding integrated information systems is also being studied, as well as ways to tabulate the new OMB race/ethnicity policies. A data strategy to support Healthy People 2010 is being developed, and the Council is looking at data needs to support welfare reform. Finally, the Council is looking at what information systems are needed to support quality improvement within the Department's health programs.

Dr. Starfield asked about plans to supplement the handful of health objectives that focus on disparities across socioeconomic groups. Mr. Scanlon described the revision process for the objectives, and said a section of the 2010 objectives would focus on socioeconomic factors.

Asked by Mr. Van Amburg about the NCHS proposal for age adjustments, he said the recommendation from NCHS to use the projected year 2000 population distribution for age-adjusted mortality has been favorably received and is still under review.

Regarding the five-year plans, he said the Department submitted a single plan to Congress for all of its component parts, bringing all HHS activities around common goals. Most of HHS agencies also have their own strategic plans, which are compatible.

Asked about provider surveys, Mr. Scanlon said no changes are planned at present, but the area has received careful study within the government and conversations have begun with outside groups. It is a complex subject, and the Data Council welcomes input from the Committee. [Source: http://aspe.os.dhhs.gov/ncvhs]

Web Site(s) of Interest for this Edition

On August 2, 1978, New York State Commissioner of Health, Robert Whalen, declared a State of Emergency at Love Canal and ordered the 99th Street School closed. He also required that a clean up plan be undertaken immediately and recommended that pregnant women and children under two who live immediately around the Love Canal landfill should move.

Love Canal is probably the country's most

notorious and infamous hazardous waste site. It wasn't the first. It wasn't the worst. But it did grab headlines, draw attention, and stimulate scientists, industrial leaders, politicians, government officials, and grassroots activists. August 2, 1998, marks the 20th anniversary of the evacuation of residents from the Love Canal neighborhood. The Science and Engineering Library (SEL) at the University at Buffalo provides an exhibit that recounts the chemical contamination of Love Canal and what has happened in the 20 years since citizens evacuated from the site. Love Canal @ 20 places into a historical perspective the role information plays in the ongoing saga of the Love Canal.

The SEL Love Canal @ 20 exhibit is in two parts. The first is a sample of newspaper headlines and articles from The Buffalo News, the Buffalo Courier Express, and The Wall Street Journal that stimulated and sustained local and national interest on the issue. Included with this local focus are other resources that were generated after the relocation of Love Canal residents, including items from the Ecumenical Task Force of the Niagara Frontier, the New York State Department of Environmental Conservation, the New York Department of Health, the Environmental Protection Agency, Time magazine, the U.S. Senate, and the Love Canal Homeowner's Association. These resources are from the University Archives Ecumenical Task Force: Love Canal Archives, ca. 1979-1990, a 250,000+ page collection of information related to the Love Canal. More information on this unique collection, the Love Canal Archive, is available at http://ublib.buffalo.edu/libraries/projects/lovecanal/.

The second part of the SEL Love Canal @ 20 exhibit fast-forwards to 1998, and features a broad spectrum of information and data resources that are available in the Science and Engineering Library (SEL). A majority of these information resources did not exist at the time of the Love Canal incident. In some cases these data and information resources were created to fill the information and data voids that were identified as a result of Love Canal and related incidents. The information highlighted in this part of the exhibit includes, reference resources (e.g., handbooks, desk references, guidebooks and dictionaries), standards (e.g., environmental monitoring, field procedures, and laboratory methods), technical reports and periodical literature (e.g., professional journals, trade magazines, and newsletters).

An online electronic version of the Love Canal @ 20 exhibit can be found on the SEL Web site at http://ublib.buffalo.edu/libraries/units/sel/exhibits/lovecanal.html. This electronic exhibit site includes a listing of Internet resources devoted specifically to the Love Canal and to other environmental sites at international, national, sate, local, and UB campus levels. [Sources: The SEL Love Canal @ 20 exhibit and its electronic version were created by Fred Stoss and Carole Ann Fabian of the State University of New York University at Buffalo. Comments may be sent to Fred at email fstoss@acsu.buffalo.edu]

Final Thought(s): Bringing Everyone Aboard

I've said before these are exciting times for GIS science and the field of Public Health. There are many developments which indicate we are gaining in participation and representation in our collective goal to advance disease control and prevention. There isn't space enough to mention these many developments but I do want to identify a few, based on first-hand experience, which reflect the theme of bringing everyone onboard in terms of GIS empowerment.

The dedicated work of Cynthia Warrick of Howard University's Urban Environment Institute (UEI) needs to be recognized by all of us. Cynthia's Summer Faculty Workshop program at UEI (see related report this issue) is

designed to strengthen the capacity of faculty members from historically black colleges and universities (HBCUs) to incorporate the use of Geographic Information Systems (GIS) into their academic teaching. This project recognizes that because of limited resources and the lack of expertise, students at minority institutions have had very little exposure to the use of GIS, and thus, are at a disadvantage in the GIS and related job markets. Thanks to Cynthia, the HBCU GIS Summer Faculty Workshop now has over fifty faculty alumni in the United States. Many of those faculty are the single point of contact for information about GIS in their colleges and universities. The workshop has been funded through federal agency and private sector in-kind contributions.

I had the privilege to participate this summer in the GPS data collection part of the program held at Ft. Dupont, Washington, D.C. It was an outstanding experience for everyone. I would be interested in knowing from our readers about other minority-directed GIS training programs that might exist. Cynthia Warrick is available to entertain funding support for the 1999 program and may be reached at voice (301) 593-5725 or email cwarrick@gmu.edu. Additional program information may be viewed at Howard University's School of Continuing Education's website www.con-ed.howard.edu.

Based on my experience with the highly successful "GIS in Public Health" August conference (see related report this edition), led by William Henriques, ATSDR, I came into contact with many attendees from state, county and local agencies. These included professionals from public health, environmental and all varieties of planning departments. Every discipline was represented, from vital registrars, physicians and nurses, to hydrologists, epidemiologists and sociologists. More than 500 attended the conference and every workshop was filled to capacity. GIS and public health at the community level provided a major focus at the conference. Considering that many of the 3,000 plus local health departments in the U.S. are in various stages of GIS mobilization (see SBIR-related solicitation this issue), we really are just viewing the tip of a growing development, of enormous proportions, for comprehensive public health participation.

Several indicators here at my own workplace suggest that GIS is going to effect all of us. We have contracted with the National Park Service to instruct GIS at NCHS in November. This is the first formal training class in GIS to be conducted here and it is oriented to staff who have had little or no exposure to the world of digital georeferenced databases. The seeds for changing our institutional's technology culture are being planted in this process. The other indicator is the steady growth of our public health GIS Users Group. I suspect that after the dust settles from logging in new subscribers from the "GIS in Public Health" conference, we will have a network pushing towards some 1,000 online professionals with a common public health interest. This collective group is beginning to represent every imaginable sector of our economy, both at home and abroad. Bringing everyone aboard with GIS awareness, training and capability will serve to advance our efforts in disease control and prevention.

Charles M. Croner, Ph.D., Editor, ***PUBLIC HEALTH GIS NEWS AND INFORMATION***, Office of Research and Methodology, National Center for Health Statistics <cmc2@cdc.gov>.

Fall '98 (Northern Hemisphere)...Stay in GIS Touch